

# Installation Guide

## Service Valve Kit

### Odyssey Split System Cooling and Heat Pump 6 to 25 Ton Units

**BAYVALV020\***: Used with TTA060\*\*A, TTA072\*\*A, TTA076\*\*A, TTA090\*\*A, TTA101\*\*A, TTA120\*\*A, TTA101\*\*C, TTA120\*\*C, TWA060\*\*A, TWA072\*\*A, TWA101\*\*A, TWA120\*\*A

**BAYVALV021\***: Used with TWA076\*\*A, TWA090\*\*A

**BAYVALV022\***: Used with TTA060\*\*D, TTA072\*\*D, TTA076\*\*D, TTA090\*\*D, TTA101\*\*D, TTA120\*\*D, TWA060\*\*D, TWA072\*\*D, TWA076\*\*D, TWA090\*\*D, TWA101\*\*D, TWA120\*\*D, TWA150\*\*D

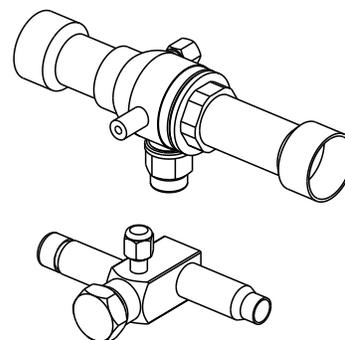
**BAYVALV023\***: Used with TTA126\*\*D, TTA150\*\*D

**BAYVALV024\***: Used with TTA156\*\*D, TTA180\*\*D, TTA201\*\*D, TTA240\*\*D

**BAYVALV025\***: Used with TWA156\*\*D, TWA180\*\*D, TWA201\*\*D, TWA240\*\*D, TWA300\*\*D

**BAYVALV026\***: Used with TTA156\*\*C, TTA180\*\*C, TTA201\*\*C, TTA240\*\*C

**BAYVALV027\***: Used with TTA251\*\*C, TTA300\*\*C



#### ⚠ SAFETY WARNING

Only qualified personnel should install and service the equipment. The installation, starting up, and servicing of heating, ventilating, and air-conditioning equipment can be hazardous and requires specific knowledge and training. Improperly installed, adjusted or altered equipment by an unqualified person could result in death or serious injury. When working on the equipment, observe all precautions in the literature and on the tags, stickers, and labels that are attached to the equipment.

# Introduction

Read this manual thoroughly before operating or servicing this unit.

## Warnings, Cautions, and Notices

Safety advisories appear throughout this manual as required. Your personal safety and the proper operation of this machine depend upon the strict observance of these precautions.

The three types of advisories are defined as follows:



Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury. It could also be used to alert against unsafe practices.

**NOTICE**

Indicates a situation that could result in equipment or property-damage only accidents.

## Important Environmental Concerns

Scientific research has shown that certain man-made chemicals can affect the earth's naturally occurring stratospheric ozone layer when released to the atmosphere. In particular, several of the identified chemicals that may affect the ozone layer are refrigerants that contain Chlorine, Fluorine and Carbon (CFCs) and those containing Hydrogen, Chlorine, Fluorine and Carbon (HCFCs). Not all refrigerants containing these compounds have the same potential impact to the environment. Trane advocates the responsible handling of all refrigerants.

## Important Responsible Refrigerant Practices

Trane believes that responsible refrigerant practices are important to the environment, our customers, and the air conditioning industry. All technicians who handle refrigerants must be certified according to local rules. For the USA, the Federal Clean Air Act (Section 608) sets forth the requirements for handling, reclaiming, recovering and recycling of certain refrigerants and the equipment that is used in these service procedures. In addition, some states or municipalities may have additional requirements that must also be adhered to for responsible management of refrigerants. Know the applicable laws and follow them.

### **⚠ WARNING**

#### **Proper Field Wiring and Grounding Required!**

Failure to follow code could result in death or serious injury.

**All field wiring MUST be performed by qualified personnel. Improperly installed and grounded field wiring poses FIRE and ELECTROCUTION hazards. To avoid these hazards, you MUST follow requirements for field wiring installation and grounding as described in NEC and your local/state/national electrical codes.**

### **⚠ WARNING**

#### **Personal Protective Equipment (PPE) Required!**

Failure to wear proper PPE for the job being undertaken could result in death or serious injury.

Technicians, in order to protect themselves from potential electrical, mechanical, and chemical hazards, **MUST follow precautions in this manual and on the tags, stickers, and labels, as well as the instructions below:**

- **Before installing/servicing this unit, technicians MUST put on all PPE required for the work being undertaken (Examples; cut resistant gloves/sleeves, butyl gloves, safety glasses, hard hat/bump cap, fall protection, electrical PPE and arc flash clothing). ALWAYS refer to appropriate Safety Data Sheets (SDS) and OSHA guidelines for proper PPE.**
- **When working with or around hazardous chemicals, ALWAYS refer to the appropriate SDS and OSHA/GHS (Global Harmonized System of Classification and Labelling of Chemicals) guidelines for information on allowable personal exposure levels, proper respiratory protection and handling instructions.**
- **If there is a risk of energized electrical contact, arc, or flash, technicians MUST put on all PPE in accordance with OSHA, NFPA 70E, or other country-specific requirements for arc flash protection, PRIOR to servicing the unit. NEVER PERFORM ANY SWITCHING, DISCONNECTING, OR VOLTAGE TESTING WITHOUT PROPER ELECTRICAL PPE AND ARC FLASH CLOTHING. ENSURE ELECTRICAL METERS AND EQUIPMENT ARE PROPERLY RATED FOR INTENDED VOLTAGE.**

**⚠ WARNING****Follow EHS Policies!**

Failure to follow instructions below could result in death or serious injury.

- All Trane personnel must follow the company's Environmental, Health and Safety (EHS) policies when performing work such as hot work, electrical, fall protection, lockout/tagout, refrigerant handling, etc. Where local regulations are more stringent than these policies, those regulations supersede these policies.
- Non-Trane personnel should always follow local regulations.

**⚠ WARNING****R-454B Flammable A2L Refrigerant!**

Failure to use proper equipment or components as described below could result in equipment failure, and possibly fire, which could result in death, serious injury, or equipment damage.

The equipment described in this manual uses R-454B refrigerant which is flammable (A2L). Use ONLY R-454B rated service equipment and components. For specific handling concerns with R-454B, contact your local representative.

**⚠ WARNING****Cancer and Reproductive Harm!**

This product can expose you to chemicals including lead and bisphenol A (BPA), which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

**⚠ WARNING****Explosion Hazard!**

Failure to follow instructions below could result in an explosion which could result in death or serious injury, and equipment damage.

**NEVER** bypass system safeties in order to pump down the unit component refrigerant into the microchannel heat exchanger (MCHE) coil. Do NOT depress the compressor contactor since it effectively bypasses the high-pressure control.

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**Revision History**

- Added TWA150\*\*D for BAYVALV022 model and TWA300\*\*D for BAYVALV025 model in the document.
- Added Reducer requirements – heat pump units and Reducer requirements – cooling units tables in Pre-Installation chapter.

# Pre-Installation

## General Operation and Installation

**Table 1. Service valve kit unit selection chart**

BAYVALV020*	BAYVALV021*	BAYVALV022*	BAYVALV023*	BAYVALV024*	BAYVALV025*	BAYVALV026*	BAYVALV027*
TTA060**A	TWA076**A	TTA060**D	TTA126**D	TTA156**D	TWA156**D	TTA156**C	TTA251**C
TTA072**A	TWA090**A	TTA072**D	TTA150**D	TTA180**D	TWA180**D	TTA180**C	TTA300**C
TTA076**A	—	TTA076**D	—	TTA201**D	TWA201**D	TTA201**C	—
TTA090**A	—	TTA090**D	—	TTA240**D	TWA240**D	TTA240**C	—
TTA101**A	—	TTA101**D	—	—	TWA300**D	—	—
TTA120**A	—	TTA120**D	—	—	—	—	—
TTA101**C	—	TWA060**D	—	—	—	—	—
TTA120**C	—	TWA072**D	—	—	—	—	—
TWA060**A	—	TWA076**D	—	—	—	—	—
TWA072**A	—	TWA090**D	—	—	—	—	—
TWA101**A	—	TWA101**D	—	—	—	—	—
TWA120**A	—	TWA120**D	—	—	—	—	—
—	—	TWA150**D	—	—	—	—	—

The service valve kit allows technicians to isolate the outdoor unit from the air handler(s) and line sets for service purposes, so they can work on the air handler/line sets without removing charge from the condenser.

See [Table 1, p. 4](#) for appropriate selection of service valve kit and then refer to the corresponding installation instructions.

### Inspection

1. Unpack all components of the kit.

2. Check carefully for shipping damage. If any damage is found, report it immediately, and file a claim against the transportation company.

### Required Materials

A copper tube for connection between condensing unit and service valve is required. A field provided reducer may also be required. See [Table 2, p. 4](#) and [Table 3, p. 5](#) for possible reducer requirements.

**Table 2. Reducer requirements – heat pump units**

Unit(s)	Suction line			Connector Quantity	Liquid line			
	Suction line size (Inside OD unit)	Ball Valve End Connection size	Connector (Reducer)		Liquid line size (Inside OD unit)	Liquid Valve End Connection size	Reducer	Connector Quantity
TWA072K*A	1.375 (1 3/8-in)	1.375 (1 3/8-in)	—	—	0.5 (1/2-in.)	0.5 (1/2-in.)	—	—
TWA072K*D	1.125 (1 1/8-in)	0.875 (7/8-in)	—	—	0.5 (1/2-in.)	0.5 (1/2-in.)	—	—
TWA090K*A	1.375 (1 3/8-in)	1.375 (1 3/8-in)	—	—	0.625 (5/8-in.)	0.625 (5/8-in.)	—	—
TWA090K*D	1.125 (1 1/8-in)	0.875 (7/8-in)	1.125(1 1/8-in.) to 0.875(7/8-in.)	2	0.5 (1/2-in.)	0.5 (1/2-in.)	—	—
TWA120K*A	1.375 (1 3/8-in)	1.375 (1 3/8-in)	—	—	0.5 (1/2-in.)	0.5 (1/2-in.)	—	—
TWA120K*D	1.125 (1 1/8-in)	0.875 (7/8-in)	1.125(1 1/8-in.) to 0.875(7/8-in.)	2	0.5 (1/2-in.)	0.5 (1/2-in.)	—	—
TWA150K*D	1.125 (1 1/8-in)	0.875 (7/8-in)	1.125(1 1/8-in.) to 0.875(7/8-in.)	2	0.5 (1/2-in.)	0.5 (1/2-in.)	—	—

**Table 2. Reducer requirements – heat pump units (continued)**

Unit(s)	Suction line			Connector Quantity	Liquid line			
	Suction line size (Inside OD unit)	Ball Valve End Connection size	Connector (Reducer)		Liquid line size (Inside OD unit)	Liquid Valve End Connection size	Reducer	Connector Quantity
TWA180K*D	1.375 (1 3/8-in)	1.375 (1 3/8-in)	—	1	0.625 (5/8-in.)	0.625 (5/8-in.)	—	—
TWA240K*D	1.375 (1 3/8-in)	1.375 (1 3/8-in)	—	—	0.625 (5/8-in.)	0.625 (5/8-in.)	—	—
TWA300K*D	1.375 (1 3/8-in)	1.375 (1 3/8-in)	—	—	0.625 (5/8-in.)	0.625 (5/8-in.)	—	—

**Table 3. Reducer requirements – cooling units**

Unit(s)	Suction line			Connector Quantity	Liquid line			
	Suction line size (Inside OD unit)	Ball Valve End Connection size	Connector (Reducer)		Liquid line size (Inside OD unit)	Liquid Valve End Connection size	Connector/Reducer	Connector Quantity
TTA072K*A	1.375 (1 3/8-in)	1.375 (1 3/8-in)	—	—	0.5 (1/2-in.)	0.5 (1/2-in.)	—	—
TTA072K*D	0.875 (7/8-in)	0.875 (7/8-in)	—	—	0.5 (1/2-in.)	0.5 (1/2-in.)	—	—
TTA090K*A	1.375 (1 3/8-in)	1.375 (1 3/8-in)	—	—	0.5 (1/2-in.)	0.5 (1/2-in.)	—	—
TTA090K*D	1.125 (1 1/8-in)	0.875 (7/8-in)	1.125(1 1/8-in.) to 0.875(7/8-in.)	2	0.5 (1/2-in.)	0.5 (1/2-in.)	—	—
TTA120K*D	1.125 (1 1/8-in)	0.875 (7/8-in)	1.125(1 1/8-in.) to 0.875(7/8-in.)	2	0.5 (1/2-in.)	0.5 (1/2-in.)	—	—
TTA120K*C	1.375 (1 3/8-in)	1.375 (1 3/8-in)	—	—	0.5 (1/2-in.)	0.5 (1/2-in.)	—	—
TTA150K*D	1.125 (1 1/8-in)	1.375 (1 3/8-in)	1.375(1 3/8-in.) to 1.125(1 1/8-in.)	2	0.5 (1/2-in.)	0.5 (1/2-in.)	—	—
TTA180K*D	1.375 (1 3/8-in)	1.375 (1 3/8-in)	—	—	0.5 (1/2-in.)	0.5 (1/2-in.)	—	—
TTA180K*C	1.625 (1 5/8-in)	1.375 (1 3/8-in)	1.625(1 5/8-in.) to 1.375(1 3/8-in.)	1	0.625 (5/8-in.)	0.625 (5/8-in.)	—	—
TTA240K*D	1.375 (1 3/8-in)	1.375 (1 3/8-in)	—	—	0.5 (1/2-in.)	0.5 (1/2-in.)	—	—
TTA240K*C	1.625 (1 5/8-in)	1.375 (1 3/8-in)	1.625(1 5/8-in.) to 1.375(1 3/8-in.)	1	0.625 (5/8-in.)	0.625 (5/8-in.)	—	—
TTA300K*C	1.625 (1 5/8-in)	1.625 (1 5/8-in)	—	—	0.625 (5/8-in.)	0.625 (5/8-in.)	—	—

# Pre-Installation

Figure 1. Service valve kit shipping list

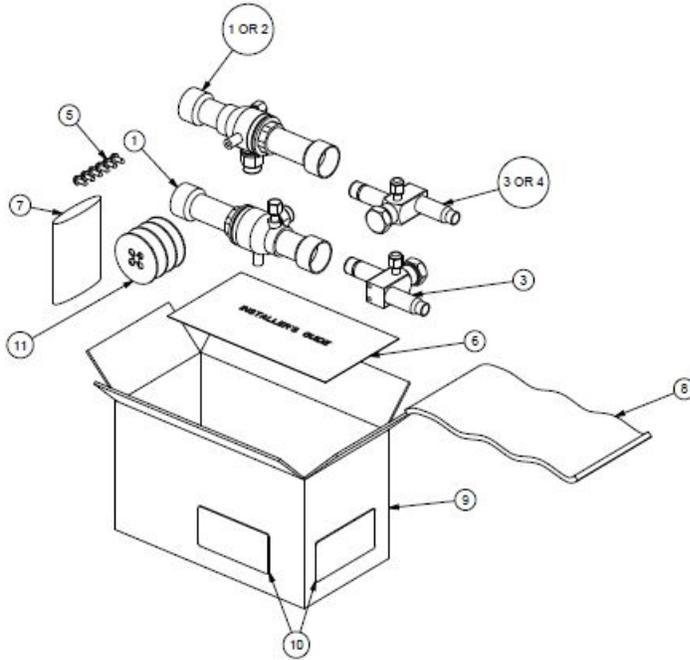


Table 4. Service valve kit shipping list

Assembly Number	Description
1	Suction Valve; Ball
2	Suction Valve; Ball (dual circuit kits only)
3	Liquid Valve; Ball
4	Liquid Valve; Ball (dual circuit kits only)
5	Screw; #10-16 X .50 Sh Met
6	Literature; Installation Guide, Service Valve
7	Envelope-screw
8	Cellulose
9	Package; Carton
10	Label
11	A2L Red Tab

# Installation

## ⚠ WARNING

### Hazardous Voltage w/Capacitors!

Failure to disconnect power and discharge capacitors before servicing could result in death or serious injury.

Disconnect all electric power, including remote disconnects and discharge all motor start/run capacitors before servicing. Follow proper lockout/tagout procedures to ensure the power cannot be inadvertently energized. For variable frequency drives or other energy storing components provided by Trane or others, refer to the appropriate manufacturer's literature for allowable waiting periods for discharge of capacitors. Verify with a CAT III or IV voltmeter rated per NFPA 70E that all capacitors have discharged.

## ⚠ WARNING

### Explosion Hazard!

Failure to follow instructions below could result in an explosion which could result in death or serious injury, and equipment damage.

**NEVER** bypass system safeties in order to pump down the unit component's refrigerant into the microchannel heat exchanger (MCHE) coil. Do **NOT** depress the compressor contactor since it effectively bypasses the high-pressure control.

## ⚠ WARNING

### Refrigerant Vapor Hazard!

Refrigerant vapors may collect and concentrate in confined spaces or low lying areas which will result in the displacement of air. This poses a potential health risk due to suffocation. Failure to follow proper handling guidelines could result in death or serious injury.

Refer to the appropriate MSDS or SDS sheets and OSHA/GHS guidelines for information referring to allowable personal exposure levels and handling guidelines.

## ⚠ WARNING

### R-454B Flammable A2L Refrigerant!

Failure to use proper equipment or components as described below could result in equipment failure, and possibly fire, which could result in death, serious injury, or equipment damage.

The equipment described in this manual uses R-454B refrigerant which is flammable (A2L). Use **ONLY** R-454B rated service equipment and components. For specific handling concerns with R-454B, contact your local representative.

## ⚠ WARNING

### Risk of Fire — Flammable Refrigerant!

Failure to follow instructions below could result in death or serious injury, and equipment damage.

- To be repaired only by trained service personnel.
- Do not puncture refrigerant tubing.
- Dispose of properly in accordance with federal or local regulations.

## Preparation

1. Ensure all power to the unit has been disconnected and locked out.
2. Remove compressor access panel(s)  
*Important: Refrigerant must not be vented to the atmosphere!*
3. For new installations, release the nitrogen holding charge by removing line connection caps and slowly opening the access port. For existing installations, properly recover refrigerant from the system. If R-454B refrigerant is used, refer to the Unit Installation, Operation, and Maintenance (IOM) guide, and follow the requirements listed in the A2L Work Procedures section.
4. Check the service valve diagrams (see [Figure 2, p. 8](#)), to determine the location for cutting the tubing and placing the valves in the refrigerant lines.
5. Locate screw holes on tube support for mounting service valves, see [Figure 5, p. 9](#). Mount service valve using the provided screws. For all 5-12.5 ton dual circuit, cooling only and heat pump units, the suction service valve should be placed outside the unit on the tubing as shown in [Figure 5, p. 9](#). For R-454B units, install the red tags on the service valve ports (see [Figure 3, p. 8](#), [Figure 4, p. 8](#), and [Figure 5, p. 9](#)).

## ⚠ WARNING

### Refrigerant under High Pressure!

Failure to follow instructions below could result in an explosion which could result in death or serious injury or equipment damage.

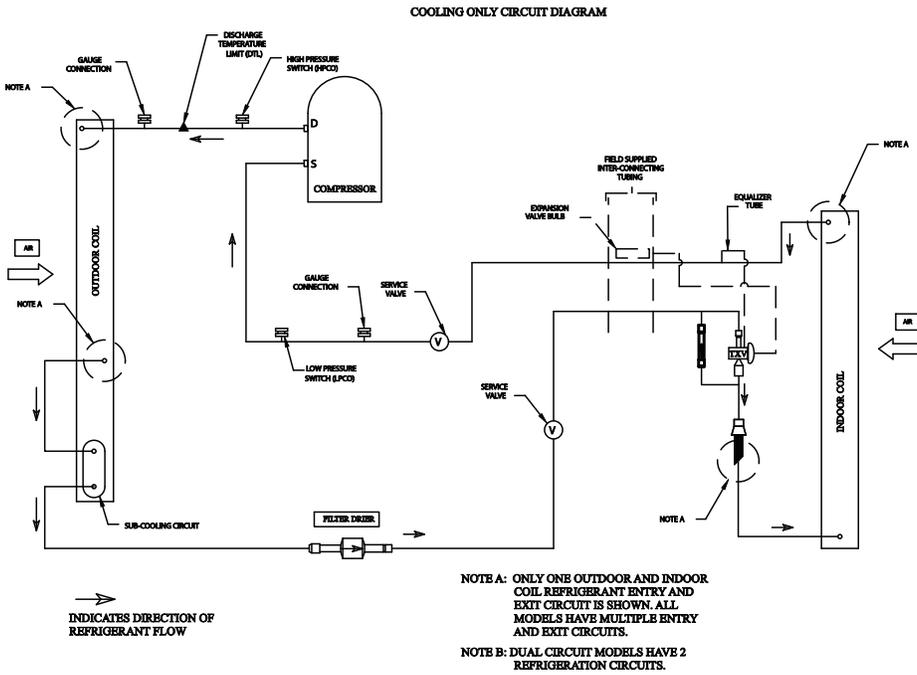
System contains refrigerant under high pressure. Recover refrigerant to relieve pressure before opening the system. See unit nameplate for refrigerant type. Do not use non-approved refrigerants, refrigerant substitutes, or refrigerant additives.

6. Clean, cut and fit the tubing using the following steps:

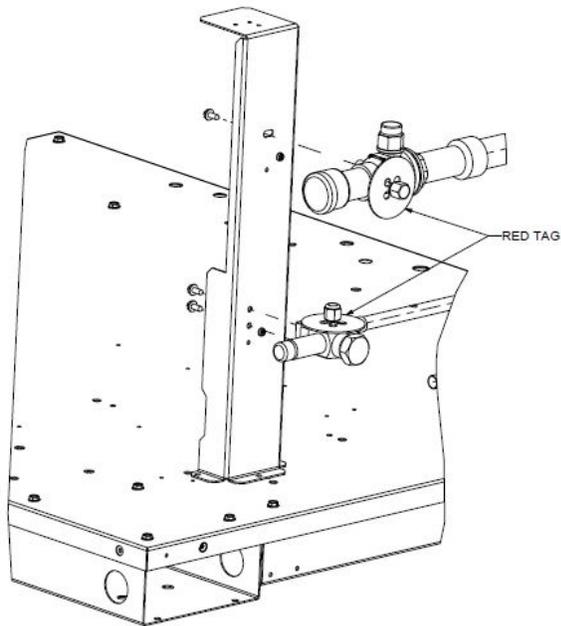
# Installation

- a. Clean the outside surface of tube with sandpaper or steel wool at the location you plan to cut and install the "T" coupling. When cutting the tubing always use a tube cutter.
- b. After the tubing has been cut, its ends must be scraped or reamed with a pointed tool to remove any sharp burr in the end of the tube.
- c. Using a clean dry cloth, wipe away any small metal particles that may be in or around newly cut edges.

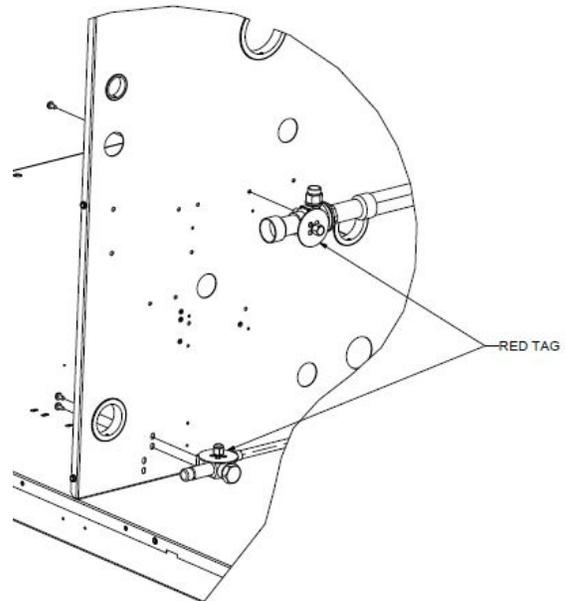
**Figure 2. Typical refrigerant circuit schematic and service valve location**



**Figure 3. Example hole placement on tube supports for service valves in single circuit 5-10 ton units**

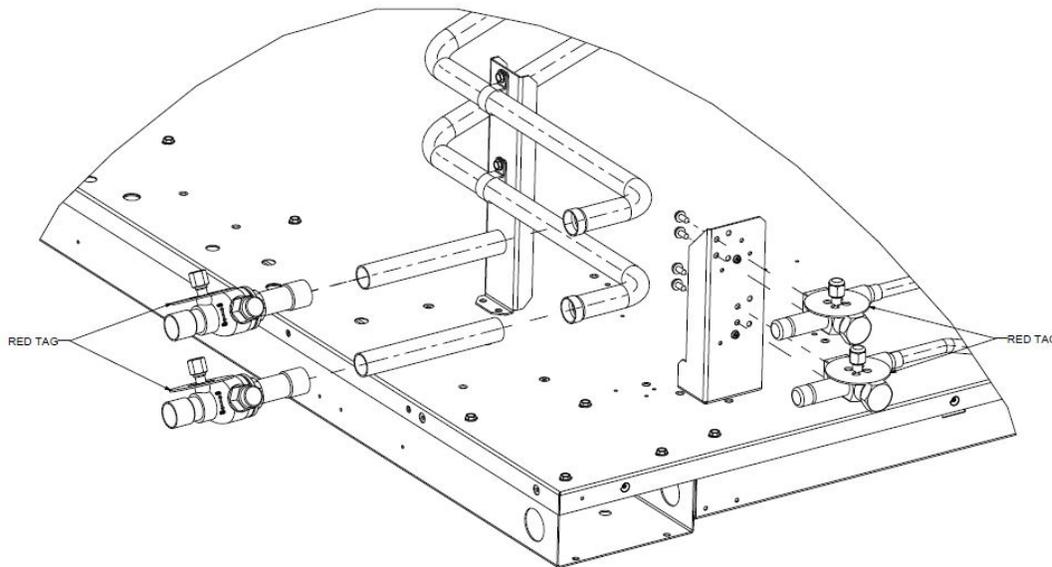


**Figure 4. Example hole placement on divider wall for service valves in dual circuit 13 to 25 ton units**



*Note: Red tags are only used for R-454B units.*

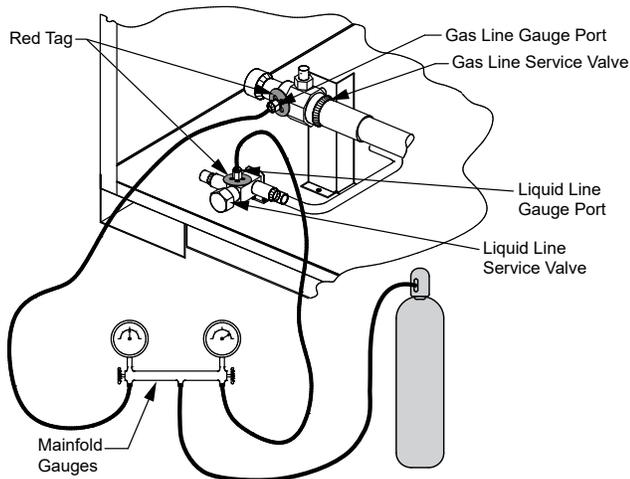
Figure 5. Example placement for service valves in dual circuit 5 to 12.5 ton units



## Installation in Condensing Unit

1. Remove plugs from the tubing ends of the service valves
2. Ensure manifold gauge hoses are attached to the service ports (one discharge port and one suction port) on the system.

Figure 6. Dry nitrogen supply hook-up for brazing



3. Attach center line manifold gauge to a dry nitrogen supply.

## ⚠ WARNING

### Explosion Hazard!

Failure to follow these instructions could result in death or serious injury or equipment or property-only damage.

Use only dry nitrogen with a pressure regulator for pressurizing unit. Do not use acetylene, oxygen or compressed air or mixtures containing them for pressure testing. Do not use hydrogen mixtures containing refrigerant and air above atmospheric pressure for pressure testing as they may become flammable and could result in an explosion. Refrigerant, when used as a trace gas should only be mixed with dry nitrogen for pressurizing units.

4. Flow dry nitrogen through the system at about 2 to 3 psig (avoid any positive pressure buildup).
5. Braze the copper joints leak tight.
6. After brazing, shut off and disconnect nitrogen supply.
7. Evacuate the condensing unit.

### **⚠ WARNING**

#### **Explosion Hazard and Deadly Gases!**

Failure to follow all proper safe refrigerant handling practices could result in death or serious injury. Never solder, braze or weld on refrigerant lines or any unit components that are above atmospheric pressure or where refrigerant may be present. Always remove refrigerant by following the guidelines established by the EPA Federal Clean Air Act or other state or local codes as appropriate. After refrigerant removal, use dry nitrogen to bring system back to atmospheric pressure before opening system for repairs. Mixtures of refrigerants and air under pressure may become combustible in the presence of an ignition source leading to an explosion. Excessive heat from soldering, brazing or welding with refrigerant vapors present can form highly toxic gases and extremely corrosive acids.



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